

ABSTRACT OF THE DISCLOSURE

A method for detecting the presence of an oxygenated compound which is produced when a substrate is reacted with an oxygenase for the substrate. The method involves reacting a coupling enzyme with the oxygenated compound to form a polymeric oxygenated compound which is fluorescent or luminescent. Measurement of the fluorescence or luminescence of the polymeric oxygenated compound provides indirect detection of the oxygenated compound produced by reaction of the oxygenase with the substrate. The method is carried out in a whole cell environment wherein the cell is transformed to express both the oxygenase being screened and the coupling enzyme. The method can be used to measure the activity of monooxygenases and dioxygenases on aromatic substrates. The method is amenable to large scale screening of enzyme mutants to isolate those with maximum oxygenase activity.

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